

CLAIMS

1. A method of synchronising a plurality of video signal generators comprising the steps of;

i) providing a master clock and a slave clock having a small difference in frequency from the master clock,

ii) applying the master clock to a first video signal generator and the slave clock to a second video signal generator;

iii) comparing the phase of field or frame synchronising signals generated by the first and second video signal generators, and

iv) applying the master clock in place of the slave clock to the second video signal generator when the synchronising signals are in phase.

2. A method as claimed in Claim 1 comprising the further steps of;

v) monitoring the slave and master clocks, and

vi) carrying out step iv) only when the master and slave clocks are in phase and both clocks are low.

3. A method as claimed in Claim 1 in which the frequency of the slave clock is lower than that of the master clock.

4. A method as claimed in any of Claim 1 comprising the further step of;

vii) comparing the phase of the line synchronising signals generated by the first and second video signal generators and carrying out step iv) only when the line synchronisation signals are in phase.

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5. A method as claimed in Claim 2 comprising the further step of;

vii) comparing the phase of the line synchronising signals generated by the first and second video signal generators and carrying out step iv) only when the line synchronisation signals are in phase.

6. An anti-aliasing method for graphics images comprising the steps of;

i) rendering the image using a plurality of video signal generators each producing the same image, the images produced by the video signal generators being offset from each other by a fraction of a pixel,

ii) synchronising the video signal generators using a method as claimed in any preceding claim, and

iii) combining the outputs of the video signal generators to produce an averaged video signal output.

7. Apparatus for synchronising a plurality of independent video signal generators, the apparatus comprising a first input for receiving field or frame synchronising signals from a first video signal generator, a second input for receiving field or frame synchronising signals from a second video signal generator, a comparator for comparing the phase of the first and second synchronisation signals, a master clock generator, a slave clock generator, the slave clock generator having a frequency different from that of the master clock generator, means for applying the master clock signal to a first output for application to the first video signal generator, means for applying the slave clock signal to a second output for application to the second video signal generator, and means for applying the master clock signal to the second output in place of the slave clock signal

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when the synchronising signals from the first and second synchronising signals are in phase.

8. Apparatus as claimed in Claim 7 comprising a second comparator for comparing the phase of the master clock and the slave clock, wherein the operation of the means for applying the master clock to the second output is dependent also on the output of the second comparator.

9. Apparatus as claimed in claim 7 comprising a third input for receiving line synchronising signals from the first video signal generator, a fourth input for receiving line synchronisation signals from the second video signal generator, and a comparator for comparing the phase of the first and second line synchronisation signals, wherein the operation of the means for applying the master clock to the second output is dependant also on the output of the third comparator.

10. Apparatus as claimed in claim 8 comprising a third input for receiving line synchronising signals from the first video signal generator, a fourth input for receiving line synchronisation signals from the second video signal generator, and a comparator for comparing the phase of the first and second line synchronisation signals, wherein the operation of the means for applying the master clock to the second output is dependant also on the output of the third comparator.

11. Apparatus as claimed in Claim 7 in which the frequency of the slave clock is lower than that of the master clock.

12. Apparatus for synchronising a plurality (n) of independent video signal generators, the apparatus

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comprising a plurality of inputs for receiving field or frame synchronising signals from a corresponding plurality of video signal generators, a master clock generator, (n-1) slave clock generators, n outputs for supplying clock signals to the video signal generators, the master clock and slave clocks being coupled to respective ones of the outputs, n inputs for receiving synchronising signals from the corresponding video signal generators, (n-1) comparators each having a first input for receiving the synchronising signals from the video signal generator that received the master clock signal, a second input for receiving the synchronising signal from the corresponding one of the (n-1) remaining video signal generators, and an output for increasing or decreasing the frequency of the associated slave clock in dependence on the phase difference between the synchronising signals applied to its inputs.

13. Apparatus as claimed in Claim 12 wherein the plurality of inputs further receive line synchronising signals from the corresponding plurality of video signal generators.

14. Apparatus for producing anti-aliased images comprising a plurality of video signal generators each producing a common image which is offset by a fraction of a pixel from the images of the other video signal generators, synchronising apparatus for synchronising the video signal generators, the synchronising apparatus being as claimed in Claim 9 and means for combining the outputs of the video signal generators to produce an averaged video signal output.

15. Apparatus for producing anti-aliased images comprising a plurality of video signal generators each

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producing a common image which is offset by a fraction of a pixel from the images of the other video signal generators, synchronising apparatus for synchronising the video signal generators, the synchronising apparatus being as claimed in Claim 12 and means for combining the outputs of the video signal generators to produce an averaged video signal output.

16. Apparatus for producing anti-aliased images comprising a plurality of video signal generators each producing a common image which is offset by a fraction of a pixel from the images of the other video signal generators, synchronising apparatus for synchronising the video signal generators, the synchronising apparatus being as claimed in Claim 13 and means for combining the outputs of the video signal generators to produce an averaged video signal output.

17. Apparatus as claimed in Claim 14 in which the anti-aliased image is stored in memory.

18. Apparatus as claimed in Claim 15 in which the anti-aliased image is stored in memory.

19. Apparatus as claimed in Claim 16 in which the anti-aliased image is stored in memory.

20. Apparatus as claimed in Claim 14 including a digital to analogue converter for converting the anti-aliased image signal to an analogue signal for application to display means.

21. Apparatus as claimed in Claim 17 including a digital to analogue converter for converting the anti-

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aliased image signal to an analogue signal for application to display means.

22. Apparatus for generating video images comprising a plurality of video signal generators each arranged to generate a portion of the image, synchronising apparatus for synchronising the video signal generators, the synchronising apparatus being as claimed in Claims 7, and a multiplexer for selecting the output of the appropriate one of the video signal generators, the output of the multiplexer producing a video signal representative of the image to be generated, wherein the multiplexer is switched by a signal derived from the synchronising signals.

23. Apparatus as claimed in Claim 22 in which the generated image is stored in memory.

24. Apparatus as claimed in Claim 22 including a digital to analogue converter for converting the generated image signal to an analogue signal for application to display means.

25. Apparatus as claimed in Claim 23 including a digital to analogue converter for converting the generated image signal to an analogue signal for application to display means.

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